

**MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY
OPERATING PERMIT TECHNICAL REVIEW DOCUMENT (TRD)**

Permitting and Compliance Division
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The Western Sugar Cooperative
NE¼, Section 10, Township 1 South, Range 26 East,
Yellowstone County
3020 State Avenue
Billings, Montana 59107

The following table summarizes the air quality programs testing, monitoring, and reporting requirements applicable to this facility.

Facility Compliance Requirements	Yes	No	Comments
Source Tests Required	X		Method 5, 6, & 9
Ambient Monitoring Required		X	
COMS Required		X	
CEMS Required	X		SO ₂ concentration in stack gas, stack gas volumetric flow rate monitor, & two fuel oil flowmeters.
Schedule of Compliance Required		X	
Annual Compliance Certification and Semiannual Reporting Required	X		Semiannual and Annual
Monthly Reporting Required		X	
Quarterly Reporting Required	X		CEMS
Applicable Air Quality Programs			
ARM Subchapter 7 Preconstruction Permitting	X		Permit #2912-03
New Source Performance Standards (NSPS)		X	
National Emission Standards for Hazardous Air Pollutants (NESHAPS)		X	Except for 40 CFR 61, Subpart M
Maximum Achievable Control Technology (MACT)		X	
Major New Source Review (NSR)	X		Western Sugar is a major facility as defined by NSR/PSD, however, no actions have been performed that would trigger a review.
Prevention of Significant Deterioration (PSD)	X		
Risk Management Plan Required (RMP)		X	
Acid Rain Title IV		X	
State Implementation Plan (SIP)	X		Billings/Laurel SO ₂ SIP

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SECTION I. GENERAL INFORMATION

A. Purpose

This document establishes the basis for the decisions made regarding the applicable requirements, monitoring plan, and compliance status of emission units affected by the operating permit proposed for this facility. The document is intended for reference during review of the proposed permit by the U.S. Environmental Protection Agency (EPA) and the public. It is also intended to provide background information not included in the operating permit, and to document issues that may become important during modifications or renewals of the permit. Conclusions in this document are based primarily on information provided in the original application submitted by The Western Sugar Cooperative (Western Sugar), formerly Western Sugar Company, on June 7, 1996, and also on Stipulated agreements between the Department of Environmental Quality (Department) and Western Sugar as documented in the June 1998 Stipulation (STIP). The STIP is discussed in Appendix E of the operating permit and a copy of the STIP is available, upon request, from the Department. Additional information was also submitted by Western Sugar with respect to the minor modification/administrative amendment requests of April 5, 2002; May 17, 2002; and June 23, 2003 and significant modification request of July 30, 2003.

B. Facility Location

Western Sugar's Factory is located at 3020 State Avenue, Billings, Montana. The legal description is Northeast ¼ of Section 10, Township 1 South, Range 26 East, in Yellowstone County, Montana.

C. Facility Background Information

Montana Air Quality Permit Background

On May 11, 1971, Permit #**286-073071** was issued to Western Sugar Company to install a 2000-gallon per minute wet scrubbing system on the existing cyclone dryer stacks.

On July 10, 1972, Permit #**485-092672** was issued to Western Sugar Company to install a wet scrubber system on the west drum pulp dryer cyclone.

On June 29, 1976, Permit #**913** was issued to Western Sugar Company for the conversion of three Riley 100,000 pound per hour natural gas fired steam generators (Riley #2, Riley #3, and Riley #4) to coal stoker firing.

On July 26, 1978, Permit #**1227** was issued to Western Sugar Company to install Multi-cyclones on the 3 coal fired boilers (Riley #2, Riley #3, and Riley #4).

On June 9, 1996, Western Sugar Company was issued Permit #**2912-00** to construct the boiler house stack extension that will extend the stack to at least 51.8 meters above ground level. However, during a routine site visit, the Department noted an economizer on the boiler house stack that was put there by Western Sugar Company in an effort to minimize the amount of heat that was vented through the stack. The economizer influenced the characteristics of the plume emitted from the stack and was installed without notifying the Department. As a result, the stipulation agreement between the Department and Western Sugar was readjusted to account for the changed characteristics of the exit gas plume. The changed conditions of the stipulation were as follows; the boiler house stack must be raised to a minimum height of 54.9 meters instead of the original 51.8 meters. Originally, the boiler house stack was 120 feet tall and the extension would add another 60

feet that would produce a total stack height of 180 feet (54.9 meters) above ground level. As part of the 1995 proposed Billings/Laurel SO₂ State Implementation Plan, Western Sugar Company and the Department stipulated that Western Sugar Company shall extend the height of the boiler house stack to at least 54.9 meters to receive Good Engineering Practices (GEP). In addition to the proposed boiler house stack extension, Western Sugar Company agreed to accept lower emission limitations for SO₂ as follows:

1. Combined 3-hour emissions of SO₂ from the east dryer stack and west dryer stack shall not exceed 88.5 pounds per 3-hour period
2. Combined daily emissions of SO₂ from the east dryer stack and west dryer stack shall not exceed 708.0 pounds per calendar day
3. Combined annual emissions of SO₂ from the east dryer stack and west dryer stack shall not exceed 148,680 pounds per calendar year

Permit #2912-00 replaced Permit #286, #485, #913, and #1227.

On April 5, 2002, the Department received a de minimis notification from Western Sugar Company. The change involved replacing the wet scrubber on one of the cooling sugar granulators with a more efficient baghouse. In addition, on May 17, 2002, the Department received a request from Western Sugar Company to modify Permit #2912-00 to reflect a name change from Western Sugar Company to Western Sugar. The permit analysis was updated to reflect the change in the control equipment on one of the cooling sugar granulators and the permit was updated to reflect the name change. On August 2, 2002, Permit **#2912-01** replaced Permit #2912-00.

On June 23, 2003, the Department received a de minimis notification from Western Sugar. The change involved replacing the wet scrubber on the second cooling sugar granulator with a more efficient baghouse. The permit analysis was updated to reflect the change in the control equipment on the second cooling sugar granulator and the permit was updated to reflect the new mailing address. In addition, the permit format, language, and rule references were updated to reflect current Department permit format, language, and rule references. Permit **#2912-02** replaced Permit #2912-01.

On July 30, 2003, the Department received an application from Bison Engineering, Inc. on behalf of Western Sugar for the modification of the diffuser at Western Sugar's facility. The modification was for the replacement of the existing slope diffuser with a more efficient tower diffuser. Although the diffuser is not an emitting unit, the diffuser has the potential to affect the downstream emitting units (pressed pulp dryers and pelletizer cooler). Therefore, Western Sugar requested federally enforceable throughput limits on the pressed pulp dryers and the pelletizer cooler that would limit potential emissions levels below Prevention of Significant Deterioration (PSD) significance levels. Permit **#2912-03** replaced Permit #2912-02.

Title V Operating Permit Background

On June 7, 1996, the Department received an operating permit application from Western Sugar Company for their facility located in Billings, Montana. The permit application was deemed administratively complete on July 17, 1996, after the Department received additional submittals on June 17, 1996. The permit application was deemed technically complete on August 17, 1996. Permit **#OP2912-00** became final and effective on November 18, 1999.

On April 5, 2002, the Department received a minor modification request from Western Sugar Company. The minor modification involved replacing the wet scrubber on one of the cooling sugar granulators with a more efficient baghouse. In addition, on May 17, 2002, the Department received a request for an administrative amendment from Western Sugar Company. The amendment involved a name change from Western Sugar Company to Western Sugar. Permit #OP2912-01 replaced Permit #OP2912-00 on September 26, 2002.

On June 23, 2003, the Department received a request for a minor modification to Operating Permit #OP2912-01 from Western Sugar. The minor modification comprises of a de minimis change to replace the wet scrubber on the second cooling sugar granulator (EU007) with a more efficient baghouse. In addition, the mailing address for the facility was updated. Further, the condition requiring the Pulp Dryers (EU004) to comply with the Administrative Rules of Montana (ARM) 17.8.309 (Particulate Matter, Fuel Burning Equipment) was removed from the permit because the condition was applied inappropriately because the pulp drying process does not meet the definition of fuel burning equipment (ARM 17.8.101(17)) because the pulp dryers utilize direct heat transfer to dry the pulp. Permit #OP2912-02 replaced Permit #OP2912-01 on November 4, 2003.

D. Current Permit Action

On July 30, 2003, the Department received an application from Bison Engineering, Inc. on behalf of Western Sugar for the modification of the diffuser at Western Sugar's facility. The modification was for the replacement of the existing slope diffuser with a more efficient tower diffuser. Although the diffuser is not an emitting unit, the diffuser has the potential to affect the downstream emitting units (pressed pulp dryers and pelletizer cooler). Therefore, Western Sugar requested federally enforceable throughput limits on the pressed pulp dryers and the pelletizer cooler that would limit potential emissions levels below PSD significance levels. The Department also received a letter on April 1, 2004, requesting that Mr. Ken Bennett, the Billings Factory Manager, be added as an alternate responsible official. Permit #OP2912-03 replaces Permit #OP2912-02.

E. Taking and Damaging Analysis

HB 311, the Montana Private Property Assessment Act, requires analysis of every proposed state agency administrative rule, policy, permit condition or permit denial, pertaining to an environmental matter, to determine whether the state action constitutes a taking or damaging of private real property that requires compensation under the Montana or U.S. Constitution. As part of issuing an operating permit, the Department is required to complete a Taking and Damaging Checklist. As required by 2-10-101 through 105, MCA, the Department has conducted a private property taking and damaging assessment and has determined there are no taking or damaging implications. The checklist was completed on August 5, 2003.

F. Compliance Designation

The Western Sugar Facility was last inspected on January 16, 2003. The Department conducted a Level-Two type inspection. The results of the inspection are summarized in the following table:

Emissions Unit ID	Description	Compliance Status
EU001	132 MMBtu/hr Erie City Boiler #1	In compliance
EU002	Boiler House Stack, (148 MMBtu/hr Riley Boilers; #2, #3, and #4)	In compliance
EU003	17 MMBtu/hr Clever Brooks Boiler #5	In compliance
EU004	26.6 MMBtu/hr Pulp Dryers	In compliance

EU005	Pellet Mills/ Conveyor	In compliance
EU006	Pelletizer-Cooler	In compliance
EU007	(2) Air Dryer and (2) Steam Sugar Granulators	In compliance
EU008	Lime Slaker Vent	In compliance
EU009	Burnt Lime Collector	In compliance
EU010	Truck Hauling-Fugitives	In compliance
EU017	Warehouse Sugar Dust Collector	In compliance

SECTION II. SUMMARY OF EMISSION UNITS

A. Facility Process Description

This facility processes sugar beets for the production of sugar. Sugar beets are received at the plant by truck at which time they are screened and washed to remove dirt and rocks. The beets are then either fed into the plant for processing or stockpiled to be processed at a later time. Overall, processing of the beets begins by slicing them into long thin strips, referred to as cossettes. The cossettes are conveyed into a diffuser where the beet sugar is removed by water and heat. The juice goes through several purifying stages and sent to the evaporators that remove the liquids and allow crystallization. The two by-products of this process are molasses and pulp, which are mixed together to create pellets to be sold as livestock feed. Shipment of the product from the facility is achieved by both rail and truck.

B. Emission Units and Pollution Control Device Identification

The emission units regulated by Permit #OP2912-03 and the pollution control device utilized by each emission unit are summarized in the following table:

Emissions Unit ID	Description	Pollution Control Device/Practice
EU001	132 MMBtu/hr Erie City Boiler #1	Natural Gas Fuel Only
EU002	Boiler House Stack, (148 MMBtu/hr Riley Boilers; #2, #3, and #4)	Wet Scrubber, Mist Eliminator, Multicyclones
EU003	17 MMBtu/hr Clever Brooks Boiler #5	Natural Gas Fuel Only
EU004	26.6 MMBtu/hr Pulp Dryers	Wet Scrubber, Mist Eliminator, Multicyclones
EU005	Pellet Mills/ Conveyor	Multicyclones
EU006	Pelletizer-Cooler	Multicyclones
EU007	(2) Air Dryer and (2) Steam Sugar Granulators	(2)Wet Scrubbers/(2)Baghouses
EU008	Lime Slaker Vent	Wet Scrubber
EU009	Burnt Lime Collector	Baghouse
EU010	Truck Hauling-Fugitives	Water Spray
EU017	Warehouse Sugar Dust Collector	Dust Collector is Control Device

C. Categorically Insignificant Sources/Activities

ARM 17.8.1201(22)(a) defines an insignificant emissions unit as an emission unit that emits less than 5 tons per year of any regulated pollutant, has the potential to emit less than 500 pounds per year of lead or any hazardous air pollutant, and is not regulated by any applicable requirement other than a generally applicable requirement. Insignificant emitting units at the Western Sugar Facility are summarized in the following table:

Emissions Unit ID	Description
IEU001	Lime Kiln
IEU002	Coal Handling
IEU003	Limestone Handling
IEU004	Coke Handling

SECTION III. PERMIT CONDITIONS

A. Emission Limits and Standards

Emission limits and standards for this Operating Permit #OP2912-03 were established from the limits and standards contained in Western Sugar's Montana Air Quality Permit #2912-03 and the STIP agreement between the Department and Western Sugar. The September 1979 Stipulation modified the sulfur in fuel rule for Western Sugar. Citing of the modified rule is not listed under each unit, but rather can be found in Section III.A - Facility Wide of the permit. Compliance demonstrations for each unit are listed in specific section for that unit (i.e., CEMS data, fuel and beet analysis, or by burning of natural gas).

B. Monitoring Requirements

ARM 17.8.1212(1) requires that all monitoring and analysis procedures or test methods required under applicable requirements be contained in operating permits. In addition, when the applicable requirement does not require periodic testing or monitoring, periodic monitoring must be prescribed that is sufficient to yield reliable data from the relevant time period that is representative of the source's compliance with the permit.

The requirements for testing, monitoring, recordkeeping, reporting, and compliance certification sufficient to assure compliance does not require the permit to impose the same level of rigor for all emission units. Furthermore, it does not require extensive testing or monitoring to assure compliance with the applicable requirements for emission units that do not have significant potential to violate emission limitations or other requirements under normal operating conditions. When compliance with the underlying applicable requirement for a insignificant emissions unit is not threatened by the lack of regular monitoring and when periodic testing or monitoring is not otherwise required by the applicable requirement, the status quo (i.e., no monitoring) will meet the requirements of ARM 17.8.1212(1). Therefore, the permit does not include monitoring for insignificant emission units.

This permit includes periodic monitoring or recordkeeping for each applicable requirement. The information obtained from the monitoring and recordkeeping will be used by Western Sugar to periodically certify compliance with the emissions limits and standards. However, the Department may request additional testing to determine compliance with emission limits and standards.

Permit #OP2912-03 contains requirements for CEMS data acquisition, logging requirements, and performance of visual surveys that will constitute monitoring at this site.

C. Test Methods and Procedures

The operating permit may not require testing for all sources if routine monitoring is used to determine compliance, but the Department has the authority to require testing if deemed necessary to determine compliance with an emission limit or standard. In addition, the permittee may elect to voluntarily conduct compliance testing to confirm its compliance status.

Based on the schedule outlined in the June 12, 1998 STIP, Western Sugar must test the boiler house stack and the pulp dryers annually for SO₂. Based on the Departments policy, Western Sugar must test the boiler house stack and the pulp dryers for particulate matter every 2 years with opacity testing being done during each campaign.

Particulate testing may be required by the Department for the Erie City and the Clever Brooks boilers as well as for the pellet mill/conveyor, pelletizer-cooler, granulators, and the lime slaker vent.

D. Recordkeeping Requirements

Western Sugar is required to keep all records listed in the operating permit as a permanent business record for at least 5 years following the date of the generation of the record. The majority of recordkeeping requirements contained in Permit #OP2912-03 are derived from the proof of monitoring requirements (i.e., CEMS data, logging of visual surveys, and inspection and maintenance).

E. Reporting Requirements

Reporting requirements are included in the permit for each emissions unit and Section V of the operating permit "General Conditions" explains the reporting requirements. However, the permittee is required to submit semi-annual and annual monitoring reports to the Department and to annually certify compliance with the applicable requirements contained in the permit. The reports must include a list of all emission limits and monitoring deviations, the reason for any deviation, and the corrective action taken as a result of any deviation.

F. Public Notice

In accordance with ARM 17.8.1232, a public notice was published in the *Billings Gazette* newspaper on or before March 19, 2004. The Department provided a 30-day public comment period on the draft operating permit from March 19, 2004, to April 19, 2004. ARM 17.8.1232 requires the Department to keep a record of both comments and issues raised during the public participation process. The comments and issues received by April 19, 2004, will be summarized, along with the Department's responses, in the following table. All comments received during the public comment period will be promptly forwarded to Western Sugar so they may have an opportunity to respond to these comments as well.

Summary of Public Comments

Person/Group Commenting	Comment	Department Response
	No Comments	NA

G. Draft Permit Comments

Summary of Permittee Comments

Permit Reference	Permittee Comment	Department Response
	No Comments	NA

Summary of EPA Comments

Permit Reference	EPA Comment	Department Response
Draft OP2912-03	Permit conditions III.A.8, III.A.9 and III.A.13 should reference a SIP approval date of May 2, 2003.	The change was made.
Draft OP2912-03	Permit condition III.A.8 – The ARM 17.8.322(4) does not say “unless otherwise specified by rule or in this permit.” This should be deleted.	This statement references possible changes in the rule, such as the changes implemented in the 1979 STIP for only the Billings sources. The statement is part of the permit condition, but not part of the ARM 17.8.322(4).
Draft OP2912-03	Permit conditions III.C.9, III.E.15 and III.E.16 reference requirements not contained in the SIP.	The reference was changed to ARM 17.8.1212.
Draft OP2912-03	Permit conditions III.C.11 through III.C.12 and III.E.19 through III.E.20 contain reporting requirements required by the SIP, but the SIP is not referenced.	The SIP reference was added.
Draft OP2912-03	Permit conditions III.E.4 and III.E.10 imply that fuels other than fuel oil may be used. EPA reads the SIP to imply that fuel oil is used all the time, and the SIP addresses only when fuel oil is burned and does not mention other sources of fuel. Either the SIP needs to be changed or the permit needs to reflect the SIP.	The statement, “during fuel oil use,” is not contained in the SIP; therefore, the statement was removed.
Draft OP2912-03	Permit conditions III.E.9 and III.C.6 are similar; however, condition III.C.6 has more description of “using the appropriate equations” in determining compliance. This language should be added to condition III.E.9.	The language was added to permit condition III.E.9.

SECTION IV. NON-APPLICABLE REQUIREMENT ANALYSIS

Western Sugar requested a permit shield from all requirements that were identified as non- applicable in its permit application. Section IV of the operating permit “Non-Applicable Requirements” contains the requirements that the Department determined were non-applicable. The following table summarizes the requirements that Western Sugar identified as non-applicable and contains the reasons that the Department did not include these requirements as non-applicable in the permit.

Rule Citation	Reason
40 CFR 51 40CFR 52 40 CFR 62 40 CFR 70 and 71	Although these rules contain requirements for the regulatory authorities and not major sources, these rules can be used as authority to impose specific requirements on a major source.
40 CFR 61, Subpart M 40 CFR 82, Subpart F	These rules are always applicable and may contain specific requirements for compliance.
ARM 17.8.120 ARM 17.8.204 ARM 17.8.326 ARM 17.8.330 ARM 17.8.504 ARM 17.8.514 ARM 17.8.515 ARM 17.8.611 ARM 17.8.612 ARM 17.8.701 ARM 17.8.804 ARM 17.8.825 ARM 17.8.826 ARM 17.8.828 ARM 17.8.901 ARM 17.8.1001 ARM 17.8.1103	<p>These rules may be procedural rules that have specific requirements that may become relevant to a major source during the permit span.</p> <p>These rules may be applicable to a major source and may contain specific requirements of compliance.</p> <p>These rules may consist of either a statement of purpose, applicability statement, regulatory definitions or a statement of incorporation by reference. These types of rules do not have specific requirements associated with them.</p>

SECTION V. FUTURE PERMIT CONSIDERATIONS

A. MACT Standards

The Industrial, Commercial, and Institutional Boiler and Process Heater MACT (40 CFR 63, Subpart DDDDD), which has been promulgated but not published in the Federal Register, is potentially applicable to Western Sugar. However, Western Sugar does not believe its facility is a major source for Hazardous Air Pollutants (HAPs). The Department and Western Sugar will review this issue further.

B. NESHAP Standards

As of the issuance date of Permit #OP2912-03, the Department is not aware of any NESHAP standards that are applicable to this facility.

C. NSPS Standards

As of the issuance date of Permit #OP2912-03, the Department is not aware of any NSPS standards that are applicable to this facility. The steam generation boilers were all installed prior to the applicability dates for the designated NSPS standards.

D. Risk Management Plan

Currently, this facility does not exceed the minimum threshold quantities for any regulated substance listed in 40 CFR 68.115 for any facility process. Consequently, this facility is not required to submit a Risk Management Plan. If a facility has more than a threshold quantity of a regulated substance in a process, the facility must comply with 40 CFR 68.130 requirements 3 years after the date on which a regulated substance is first listed or the date on which a regulated substance is first present in more than a threshold quantity in a process, whichever is later.